

Fig. 1.—*Rhynchosia androyensis*: A, flowering habit; B, flower; C, calyx; D, standard petal; E, wing; F, keel; G, stamens; H, ovary (from D.J. & B.P. Du Puy & P. Ravonjarisoa M142); I, pod; J, seed (from D.J. & B.P. Du Puy & P. Ravonjarisoa M120).

The specific epithet refers to the Androy region of southern Madagascar, where the majority of known collections originated.

### **Rhynchosia chapelieri** Baillon

Bull. Mens. Soc. Linn. Paris 1: 387 (1883).

*R. denisii* R. Viguiier, Notul. Syst. (Paris) 14: 176 (1952).—Type: *Perrier de la Bâthie 16323*, Montagne des Français près de Diego Suarez, IV.1924, fr. (holo-, P).

LECTOTYPE (chosen here).—*Bernier 247*, Diego Suarez [Antsiranana], s.d., fl., jfr. (P; iso-, P).

Of the 3 syntypes of *R. chapelieri* Baillon, only one of them (*Bernier 247*) corresponds closely with the type description, particularly in the presence of young pods. This specimen must therefore be chosen as the lectotype. The pods are submembranaceous and flat, identical to those of *Perrier de la Bâthie 16323*, the holotype of *R. denisii* R. Viguiier, which is therefore considered to be a later synonym. The other two syntypes (*Chapelier s.n.* and *Boivin 2236-bis*), which both lack pods, belong to the much more widespread species now named *R. leandrii* Du Puy & Labat (which was previously known as *R. chapelieri*).

### **Rhynchosia leandrii** Du Puy & Labat, *sp. nov.*

*R. chapelieri* Baillon, Bull. Mens. Soc. Linn. Paris 1: 387 (1883), pro parte, lecto. exclu., sensu auct. mult.  
*R. heterotricha* Boivin, nom. nud. in sched.

A *R. chapelieri* Baillon differt leguminibus viridulis velutinis dehiscentibus margine superiore, valvibus interne cupreis, seminibus duobus externe cyaneo-nitidis.

TYPE.—*D.J. & B.P. Du Puy & J. Andriantiana M504*, W Madagascar, Province of Majunga (Mahajanga), Bemaraha Massif, south-eastern end, behind the eastern escarpment, ca. 14 km west of Marerano, 19°04'S-45°03'E, ca. 500 m, 20.III.1990, fl., fr. (holo-, K; iso-, K, L, MO, NY, P, PRE, TAN, WAG).

A perennial, climbing herb or subshrub to ca. 3 m tall, often forming dense, tangled clumps of interlaced stems; stems twining, finely pubescent, becoming woody and up to ca. 3 cm in diameter. Leaflets 3, the terminal broadly triangular-ovate (deltoid), 50-90 × 60-110 mm, the base broad and truncate, the apex abruptly short-acuminate, sparsely gland-dotted and thinly pubescent mainly on the veins above and beneath, deep green and oily above, paler beneath.

Racemes 10-20 cm long, dense, the flowers often paired, often with secondary branches towards the base, mostly axillary but sometimes also terminal and combined into a compound, leafy inflorescence, the axis densely yellow pubescent. Flowers 8-9 mm long, yellow-brown, the standard yellowish but strongly stained red-brown and with many fine red-brown veins in front and behind and with a small brown basal eye, the wings bright yellow, the keel yellow-green tinged brown. Calyx 3-4 mm long, shortly but densely yellow pubescent; teeth triangular, about

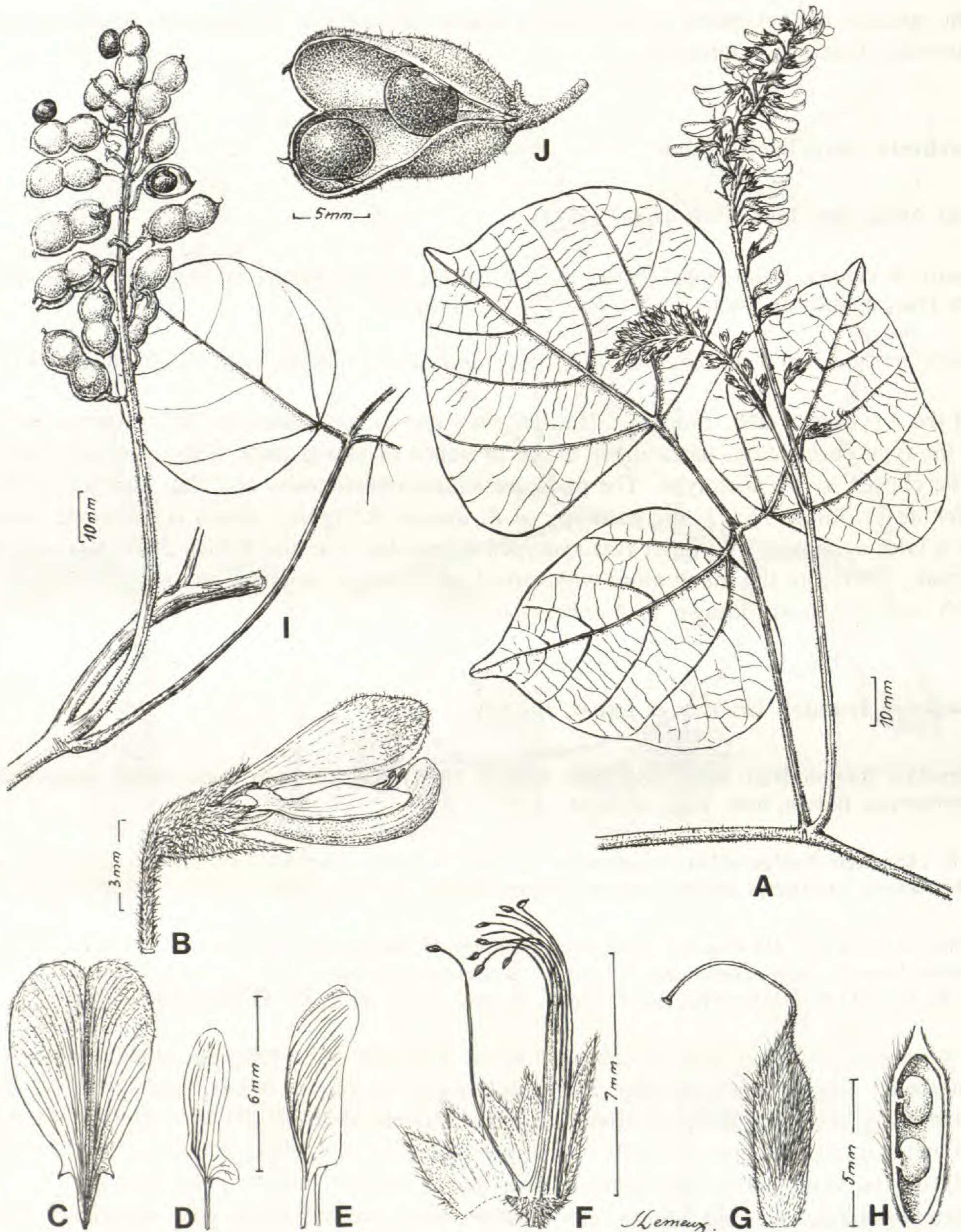


Fig. 2.—*Rhynchosia leandrii*: A, flowering habit; B, flower; C, standard petal; D, wing; E, keel; F, stamens and calyx; G, ovary; H, ovules (from D.J. & B.P. Du Puy & J. Andriantiana M504); I, fruiting habit; J, pod and seeds (from Dorr et al. 3455).

as long as the tube. Standard narrow, densely pubescent mainly towards the apex behind; wings shorter than the keel. Ovary densely and shortly pubescent and with many longer, rather stiff hairs.

Pods in dense, pedunculate infructescences, persistent, oblong, compressed, 14-18 × 8-9 mm, very shortly but densely velvety pubescent with scattered long, spreading hairs, but without swollen-based hairs, pale olive green when mature, opening along the upper margin and becoming boat-shaped, copper brown within, the seeds persistent and attached to the upper margin. Seeds (1 or) 2, broadly ellipsoidal, 4-5 × 3.5-4 × 3-3.5 mm, deep navy blue, very glossy, with a pale hilum.

PARATYPES.—MADAGASCAR: *Boivin 2236 bis*, Nossi Bé, s.d., fl. (P, syntype of *R. chapelieri* Baillon); 2733, Diégo-Suarez, s.d., fr. (P); *Bosser 8173*, Sahamaloto, ouest du lac Alaotra, VI.1955, fr. (P, TAN); *Chapelier s.n.*, Madagascar boréal, s.d., fl. (P, syntype of *R. chapelieri* Baillon); *Decary 18903*, district de Sakaraha, Lambomakandro, 3.III.1943, fl. (P); *Dorr et al. 3455*, Antananarivo Province, 14 km SE of Ambaravarana (71 km NW of Tsiroanomandidy), 10.I.1985, fr. (K, MO, P, TAN); *Jardin Botanique de Tananarive 3280*, lac Alaotra (MEN-62), s.d., fr. (P); 4349, lac Alaotra (E-12), s.d., fl. (P); 5418, Befandriana Nord, Ampotamainty, 29.X.1942, fr. (P); *Leandri 824*, Tsingy de Bemaraha (9ème réserve), Tsiandro, 10.II.1933, fl. (P); 880, *ibid.*, X-XII.1933, fl. (P); *Leandri & Saboureaux 2830*, Antsingy, vers Bevary, E d'Antsalova, 400-600 m, 27.I-5.II.1960, fr. (K, MO, P, WAG); *Morat 2136*, Horombe, Andiolava, II.1965, fl. (TAN); *Peltier 1089*, Ambodimanga, km 364 route de Majunga, 18.IX.1959, fr. (K, MO, P, TAN); *Perrier de la Bâthie 554*, Firingalava, IV.1898, fl. (P); 554bis, Morataitra, rive droite de la Betsiboka en amont de son confluent avec l'Ikopa, IV.1899, fl. (P); 554bis, *ibid.*, VI.1899, fr. (P); 4362, Boïna, Haute Bemarivo, IV.1907, fl., fr. (P); *Seyrig 617*, environs Ampandrandava, entre Bekily et Tsivory, crêtes est, vers 1100 m, IV.1943, fl. (P); 826 (also in *Jardin Botanique de Tananarive 6404*), environs Ampandrandava, entre Bekily et Tsivory, région de Moraharivo au SE d'Ampandrandava, vers 1000 m, VIII.1944, fr. (P).—COMORO ISLANDS: *Boivin s.n.*, Mayotte, Pamanri, XI.1850, fr. (P); *Labat & Pascal 2723*, Mayotte, près du village de Choungui, 12°57'30"S-45°07'35"E, 300 m, 12.IV.1996, fl., jfr. (K, MO, P).

*R. leandrii* closely resembles *R. chapelieri* except when pods are present, and has until now been known under this latter name. *R. leandrii* is easily recognised in fruit by its oblong, coriaceous, minutely velvety, pale green pods opening along the upper margin to expose a copper-coloured interior with 2 deep blue, glossy seeds, while the pods of *R. chapelieri* are purse-shaped, thin-textured and membranous, finely and thinly pubescent, and are probably indehiscent. Both *R. leandrii* and *R. chapelieri* have large, broad leaflets with truncate bases and abruptly short-acuminate apices, brownish flowers and a uniform, dense, short pubescence on the stems, inflorescences, calyces and standard petals.

*R. leandrii* is widespread but uncommon throughout the western region of Madagascar, particularly in the Boïna and the Bemaraha Massif (also recorded from Lac Alaotra, but possibly introduced there), and it is also recorded from the Comoros. It occurs in open woodland, woodland margins and on exposed rock outcrops, on limestone, at (100-)300-800 m altitude. It is recorded as flowering from December to April, but probably also flowers at other times of the year. In the western region of Madagascar, *R. leandrii* is known under the vernacular names of "Hazovongy" or "Masonamboaromotra".

This species is dedicated to Jacques Leandri, in recognition of his outstanding contributions to Malagasy floristic and systematic botany, particularly through his collections from the Bemaraha Massif in which *R. leandrii* occurs.

## **Rhynchosia versicolor** Baker

J. Linn. Soc., Bot. 20: 132-133 (1883).

*R. rhodophylla* Baker, J. Linn. Soc., Bot. 20: 133 (1883).—Type: *Baron 771*, Central Madagascar (holo-, K; iso-, P).

*R. trichocephala* Baker, J. Linn. Soc., Bot. 22: 465 (1887).—Type: *Baron 3393*, Madagascar (holo-, K; iso-, P).

TYPE.—*Parker s.n.*, Madagascar, Ambohimanga (holo-, K).

*R. versicolor* is usually a suberect to scrambling subshrub, the shoots often with axillary and terminal inflorescences, with only a few shoots climbing or twining. The density of the indumentum is also variable, and in particular the presence of swollen-based, yellowish bristles on the pods and inflorescence axis. This latter character varies with the distribution and allows the separation of two distinct subspecies as follows:

Pod, ovary and inflorescence axis with swollen-based, yellow, bristly hairs present amongst the white, silky hairs without a swollen base; stems often short and not twining, generally giving a suberect, shrubby habit, although often also with some shoots elongated and scrambling or twining; terminal leaflet usually triangular-ovate with a broad, flat base (deltoid) ..... subsp. **versicolor**

Pod, ovary and inflorescence axis silky hairy with white hairs only (no swollen-based hairs); young stems predominantly slender and twining, giving a distinctly climbing habit; terminal leaflet ovate with a rounded base ..... subsp. **imerinensis**

### **R. versicolor** subsp. **versicolor**

Subsp. *versicolor* occurs throughout the southern and western parts of the Central Plateaux (mainly in the Betsileo and Bara regions), from Antsirabe and the south-western portion of the Ankaratra Massif to the Andringitra and Isalo Massifs.

### **R. versicolor** subsp. **imerinensis** Du Puy & Labat, *subsp. nov.*

*A subspeciei typica differt distincto scandente habitu, caulibus juvenilibus praecipue gracilibus volubilibus que; foliis cum foliolo apicali ovato basi rotundato; ovario legumineque et rachidi inflorescentiae argenteis pilis solum ornatis.*

TYPE.—*Perrier de la Bâthie 16840*, Madagascar, Manerinerina sur le Tampoketsa [d'Ankazobe] entre l'Ikopa et la Betsiboka, 1500 m, XII.1921, fl., fr. (holo-, P; iso-, K, P).

PARATYPES.—MADAGASCAR: *Baron 873*, Central Madagascar, s.d., fr. (K); *984*, *ibid.*, fl. (K); *1149*, *ibid.*, fr. (K); *Benoist 1282*, Manjakatempo, 28.X.1951, fl. (TAN); *1283*, *ibid.*, fl. fr. (P); *1320*, *ibid.*, 26.V.1951, fl. (P); *Bosser 914*, Fenoarivo, route de Beanana, VI.1951, fl. (TAN); *7843*, Tampoketsa d'Ankazobe, P.K. 120 route de Majunga, IV.1955, fl., fr. (P, TAN); *11071*, Iarinandriana, 40 km de Tananarive, IV.1957, fl., fr. (TAN); *13184*, environs de Tananarive, Iarinandriana, P.K. 35 route du sud, VII.1959, fl. (TAN); *Cam-*

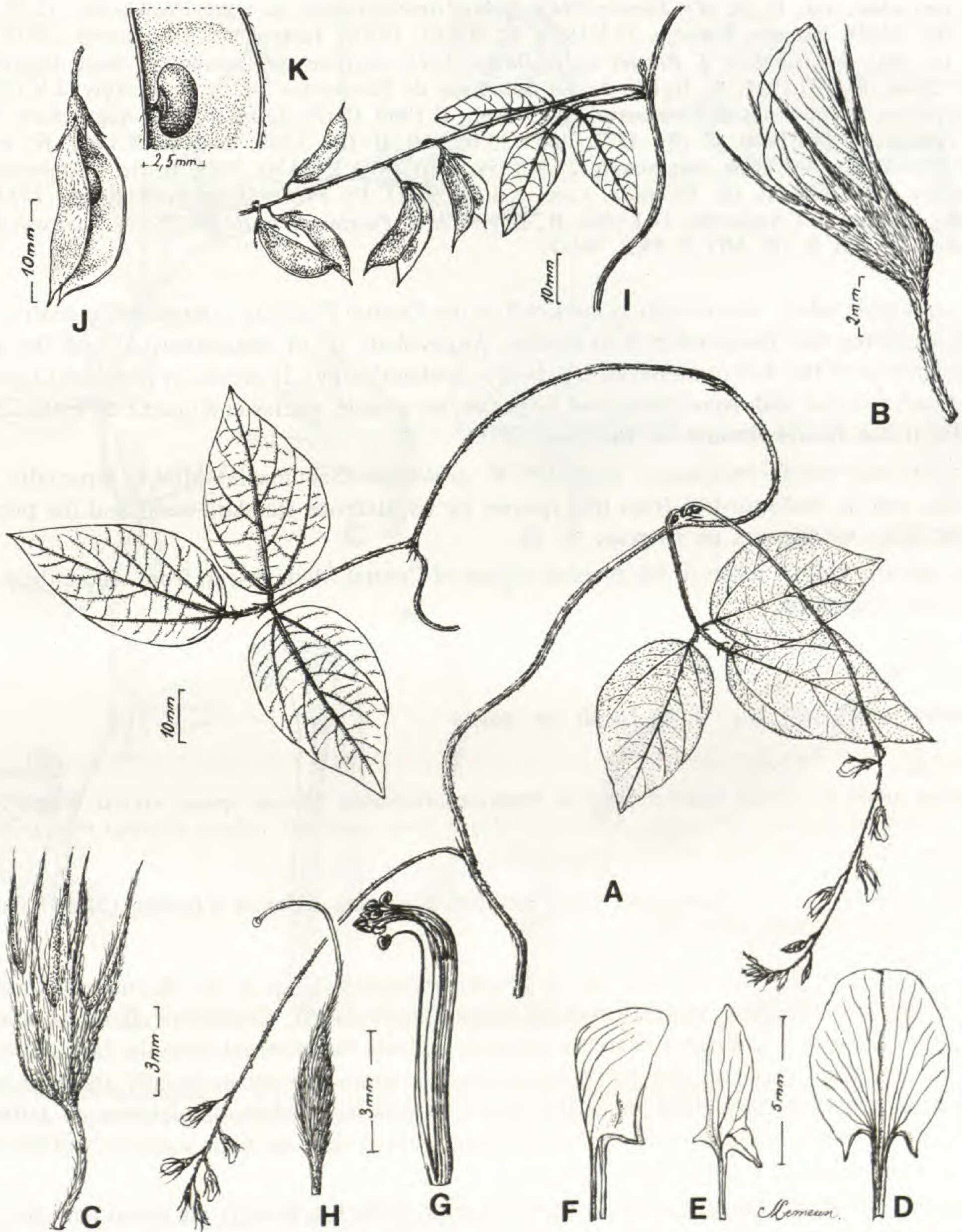


Fig. 3.—*Rhynchosia versicolor* subsp. *imerinensis*: A, flowering habit; B, flower; C, calyx; D, standard petal; E, wing; F, keel; G, stamens; H, ovary; I, fruiting habit; J, pod; K, seed (from *Perrier de la Bâthie* 16840).

*penon s.n.*, s.loc., s.d., fl., fr. (P); *Decary 7442*, forêt d'Ambohitantely au nord d'Ankazobe, 12.III.1930, fl., fr. (P); *13844*, Imerina, Behenjy, 11.V.1939, fl., fr. (P); *19309*, Tampoketsa d'Ankazobe, 29.IV.1943, fl., fr. (K, MO, P); *Humbert & Perrier de la Bâthie 2233*, environs de Tananarive, mont Angavokely, 1500-1750 m, 10.VIII.1924, fl., fr. (P); *Jardin Botanique de Tananarive 2471*, Angavokely, 2.V.1937, fl. (P); *Keraudren 56*, environs de Tananarive, Angavokely, II.1960, fl. (P); *Leandri 2565*, Angavokely, 40 km E de Tananarive, 14.I.1960, fl. (P); *3172*, ibid., 25.II.1960, fl. (P); *3267*, ibid., 20.X.1960, fl., fr. (P); *Peltier 1185*, canton de Carion, Angavokely, 25.X.1959, fl., fr. (MO, P, TAN); *1883*, district d'Ambatolampy, Amboasary, 14.II.1960, fl. (K, P); *4483*, s.loc., s.d., fl. (MO, P); *Peltier, Leandri & Bosser 1731*, Angavokely, sommet de l'Angavobe, 14.I.1960, fl., fr. (P, TAN); *Perrier de la Bâthie 13770*, environs d'Ambatolampy, V.1920, fl. (K, MO, P, PRE, WAG).

*R. versicolor* subsp. *imerinensis* is confined to the Central Plateaux around Antananarivo (Imerina), including the Tampoketsa d'Ankazobe, Angavokely (E of Antananarivo) and the north-eastern portion of the Ankaratra Massif (Behenjy, Ambatolampy). It occurs in woodland remnants and on rocky slopes with some protection from fire, on granite, gneiss and quartz, at 1000-2300 m altitude. It can flower throughout the year.

*R. versicolor* subsp. *imerinensis* resembles *R. sublobata* (Schumach.) Mickle especially in its pods, but can be distinguished from this species by its glabrous standard petal and the presence of some silky white hairs on its pods.

The specific epithet refers to the Imerina region of Central Madagascar, from where the known collections originated.

### ***Eriosema betsileense* Du Puy & Labat, sp. nov.**

*Species affinis E. elliotii* Baker f. *quod in tropicam orientalem Africam sponte crescit, a qua gracile habitu, longibus argenteis pilis nullis, foliolis vexilloque dense punctatis, calycis dentibus brevioribus, leguminibus argenteis pilis basi inflatis ornatis differt.*

TYPE.—*Humbert 28317*, Madagascar, Ouest Betsileo, montagnes à l'ouest d'Itremo, 1500-1700 m, 17-22.I & 18-22.VI.1955, fl. (holo-, P).

A small, perennial, trailing herb; stems slender, unbranched, up to ca. 40 cm long, probably from a perennial rootstock, minutely pubescent and gland-dotted, sometimes also with scattered short hairs. Leaflets 3, palmate (without a rachis separating the terminal from the lateral leaflets), the terminal leaflet elliptic to obovate, 8-33 × 5-14 mm, obtuse to cuneate basally, the apex obtuse to rounded, minutely appressed-pubescent above (appearing glabrous), glabrous to pubescent mainly on the veins beneath, with numerous minute gland dots on both surfaces; petiole short, 2-5 mm long; stipules 2-4 mm long, narrow.

Racemes 1.5-4 cm long (to 6 cm in fruit), slender, with 1-4 flowers clustered near the apex. Flowers 7-8 mm long, yellow. Calyx ca. 4 mm long, sparsely pubescent and gland-dotted; teeth triangular, shorter than the tube. Standard with short hairs and densely gland-dotted behind; keel gland-dotted.

Pods oblong, compressed, 12-15 × 6-7 mm, with gland-dots, short, swollen-based hairs and many long, fine, yellowish hairs, dark brown, splitting into 2 spiralling valves. Seeds (1 or) 2,

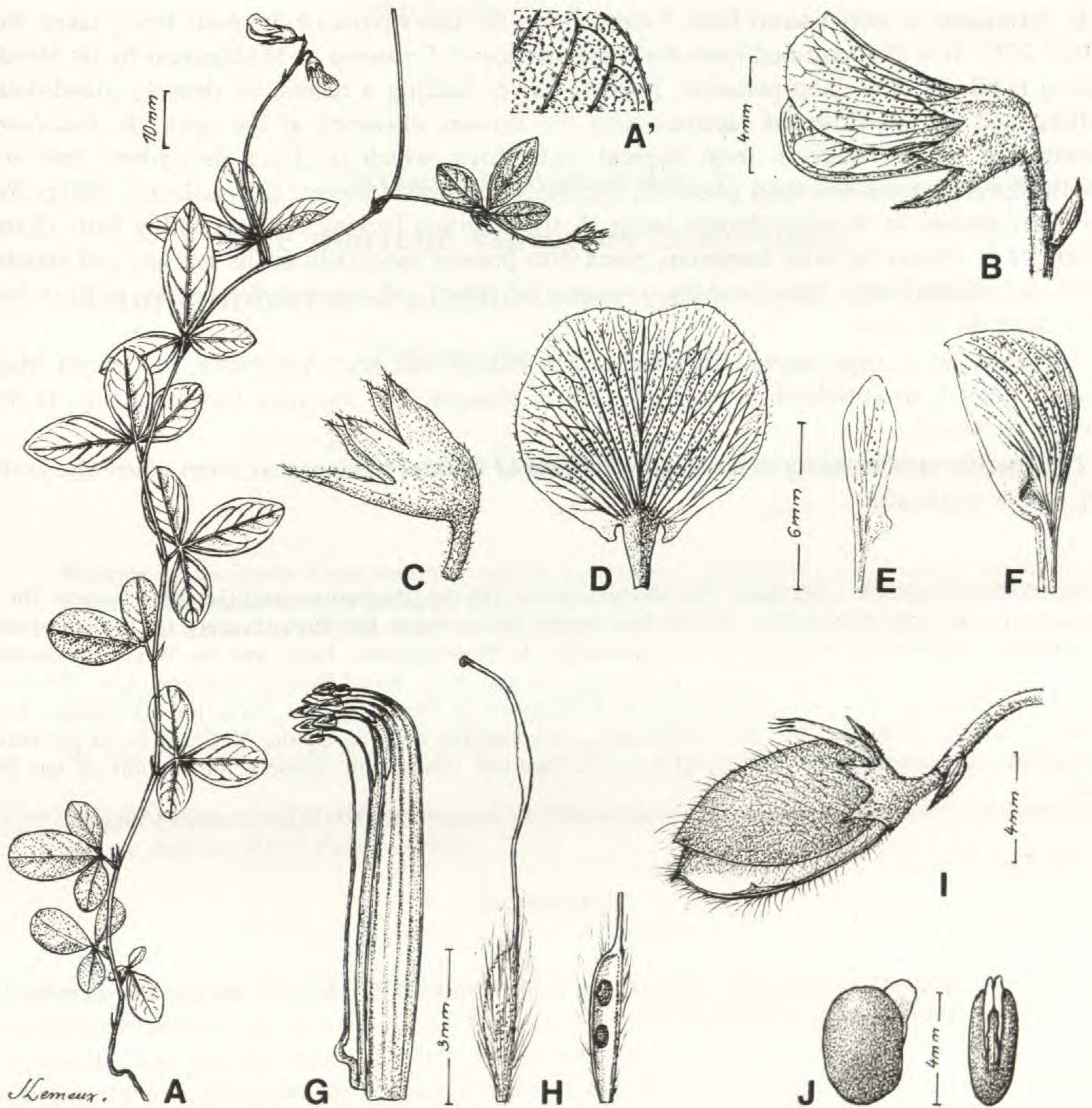


Fig. 4.—*Eriosema betsileense*: A, flowering habit; A', leaflet undersurface with gland dots (from *Humbert 28317*); B, flower; C, calyx; D, standard petal; E, wing; F, keel; G, stamens; H, ovary (from *Peltier 2175*); I, pod; J, seed (from *Peltier 2237*).

oblong, ca.  $3.5 \times 2.5 \times 2$  mm, blackish, glossy, the hilum long and acentric with a conspicuous white aril.

PARATYPES.—MADAGASCAR: *Peltier 2175*, Anjoma (district d'Ambositra), 20.III.1960, fl. (P); 2237, Sandrandahy (district de Fandriana), rive gauche de la Mania, 22.III.1960, fr. (K, P, TAN).



*E. betsileense* is only known from 3 collections, the description of the pods being taken from *Peltier* 2237. It is distinguished from the other species of *Eriosema* in Madagascar by its slender, trailing habit, its very short-petiolate, palmate leaves lacking a rachis, its densely gland-dotted leaflets, and its few-flowered racemes with the flowers clustered at the apex. *E. betsileense* resembles *E. elliotii* Baker f. from tropical east Africa, which is also a decumbent herb with few-flowered racemes and short-petiolate, digitately trifoliolate leaves. *E. betsileense* differs from this latter species in its more slender habit, its indumentum lacking the long, silky hairs characteristic of *E. elliotii* but with numerous gland dots present especially on its leaflets and standard petals, its shorter calyx teeth, and the presence of short, swollen-based hairs as well as long, silky hairs on its pods.

*E. betsileense* is only known from the Itremo Massif and near Ambositra, in Central Madagascar. It occurs in grassland, at ca. 1300-1700 m altitude. The recorded flowering time is from January to March.

The specific epithet refers to the Betsileo region of Central Madagascar, from where the known collections originated.

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#### REFERENCE

- LACKEY J.A. 1981.—Phaseoleae DC.: 301-327, in R.M. Polhill & P.H. Raven, *Advances in Legume Systematics* 1. Royal Botanic Gardens, Kew.

**Sertum polynesianum V.**  
**Une nouvelle espèce de *Sclerotheca***  
**(Campanulaceae–Lobelioideae), endémique de Tahiti,**  
**Polynésie Française**

J. FLORENCE

**Résumé :** Description d'une nouvelle espèce, *Sclerotheca magdalenae* appartenant à un des rares genres endémiques du SE Pacifique. Espèce remarquable par ses grandes fleurs, elle n'est connue que d'une station du Mt Pito Hiti, second sommet de l'île de Tahiti.

**Summary:** Description of *Sclerotheca magdalenae*, belonging to one of the rare genera endemic of the SE Pacific. A very striking species with large flowers and known only from one point at Mt Pito Hiti, the second summit of Tahiti island.

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Depuis le travail de RAYNAL (1976), le genre *Sclerotheca* appartenant à la sous-tribu des Sclerothecinae définie par WIMMER (1948), comptait cinq espèces, quatre endémiques des îles de la Société, une des îles Cook. Dans le cadre des importantes prospections effectuées lors de mon séjour dans le Territoire de Polynésie française et destinées à servir de support à une flore moderne, j'ai pu récolter plusieurs échantillons de ce genre sur l'île de Tahiti. Leur étude m'amène à considérer comme nouveau une partie de ce matériel. Remarquable aussi bien par ses fleurs, les plus grandes du genre avec *S. jayorum* J. Raynal, son habitat — c'est à l'heure actuelle, l'espèce située à l'altitude la plus élevée, vers 1800 m sur un flanc de montagne — elle l'est aussi par sa rareté, puisqu'étroitement localisée en un point de l'île.

***Sclerotheca magdalenae* Florence, sp. nov. — Fig. 1, 2.**

A. *S. arborea* (J.G. Forster) A. DC., *anguste alato petiolo, oblongatis subcarnosis foliis, majoribus floribus, densiore pubescentia staminum tubo, majore fructu, a S. oreade* Wimmer, *oblongatis foliis, longioribus calycis dentibus majoribus floribus, praecipue differt.*

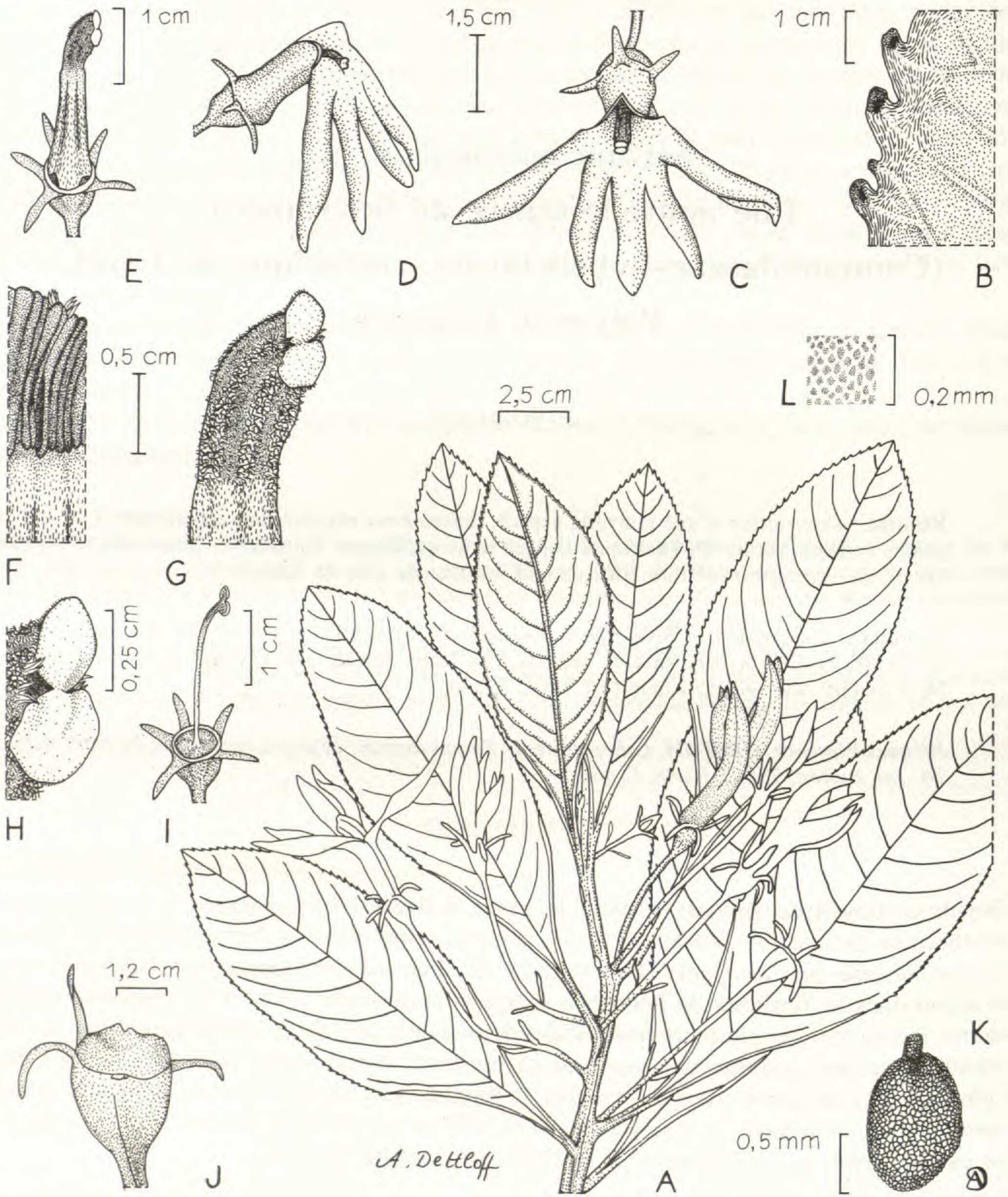


Fig. 1. — *Sclerotheca magdalenaе* Florence : A, rameau florifère ; B, détail de la marge foliaire ; C, fleur vue de face ; D, fleur vue de profil ; E, androcée ; F, sommet de la face interne du tube staminal ; G, sommet du tube staminal ; H, détail du stigmate ; I, gynécée ; J, fruit immature ; K, graine ; L, détail du testa. (A-J, Florence 5481 ; K, L, Florence 5476).



Fig. 2. — *Sclerotheca magdalenae* Florence : fleur vue de face (Florence 5479).

TYPUS. — *Florence 5479*, Société, Tahiti, Mahina, flanc N du Mt Pitohiti, sentier de l'Orohena, 149°28'W – 17°37'S, 1870 m, 20.X.1983, fl. (holo-, P!; iso-, BISH!, PAP!, US!).

Arbrisseau à petit arbre dressé, entièrement glabre, haut de 1,2-4 m, muni de petites racines aériennes arquées. Jeunes pousses vert rougeâtre in vivo. Feuilles à pétiole plan-convexe, de 0,7-3,8 cm, limbe subcharnu, oblong, rarement elliptique-oblong, de 7,5-18,5 × 2,5-6,5 cm, (L/l = 3), base cunéée longuement décurrente sur le pétiole, apex aigu, marge révoluée et entière dans le 1/4 inférieur; 5-7 dents glanduleuses au cm, rougeâtres in vivo, atteignant 0,7-1 mm; costa faiblement canaliculée dessus, en relief dessous, 11-16 paires de nervures secondaires rases sur les deux faces, réseau tertiaire indistinct.